

Amendment Responsive to  
16 Feb. 2006 Office Action

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REMARKS

This amendment responds to the office action of 16 February 2006 which considered only claims 1 - 18 of pending claims 1-20. This office action provisionally

5 rejected claims 1-18 on the grounds of nonstatutory double patenting. This office action further rejected claims 1-18 under 35 U.S.C 112; and further rejected claims 1-4,7-8,11-14 and 18 under 35 U.S.C. 102 (b) and 35 U.S.C. 103 (a). Claims 19 and 20 were not considered and therefore are presumed to be in condition for allowance. The present amendment revises claims 1-20 and submits claims 1-20 for reconsideration.

10 The alleged 35 U.S.C. 112 deficiencies of claims 1, 2 and 12, 4 and 14, 6 and 16, and 11 enumerated in paragraphs 2 - 4 of the office section have been reviewed and revised where necessary.

15 With regard to the double patenting issues set forth in paragraphs 5, 6 and 7 of the office action, terminal disclaimers are submitted herewith to overcome the rejection of claims 1-18 on obviousness type double patenting. This rejection is traversed. However the requested terminal disclaimers are attached hereto expedite the prosecution of the application.

Response to the 35 U.S.C. (b) and 35 U.S.C. 103 rejections.

20 The office action rejected claims 1-4, 7-8, 11-14 and 18 under 35 U.S.C. 102(b) as anticipated by Cohen (6, 026, 464). This office action also rejected these claims under 35 U.S.C. 103 (a) as obvious over Cohen. These rejections are respectfully traversed. Claims 5, 6, 9, 10, 15-17, 19 and 20 were not mentioned in the 103 rejection. Presumably they define subject matter which would be allowable if incorporated into an independent claim.

25 The Cohen patent has been studied and found to be of no interest to the presently claimed invention. Both Cohen and the presently claimed invention are similar to the extent said both disclose a memory control system. Other than this, Cohen and the presently claimed invention have nothing in common. A major difference between the presently claimed invention and Cohen is the structure that

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allocates access to memory banks 20 of Cohen and applicant's memory banks 1803 on figure 18.

The Cohen memory banks do not participate in allocating memory bank access.

Memory bank accessing in Cohen is resolved in a manner well known in the art by

5 operating memory controllers 18 so that each bidding controller 18 applies contention signals to the conductors of memory bus 22. The Cohen contention is assisted by memory bus arbiter element 24. Bus arbiter 24 determines which memory controllers 18 are contending for memory bus access and determines which one of contending memory controller 18 is to be granted priority for access to memory bus 22 and, in  
10 turn, to an idle memory bank 20. The Cohen memory banks are not involved in this contention and do not apply potentials to the conductors of memory bus 22 to assist the Cohen contention. The Cohen contention is controlled solely by the memory bus arbiter 24 and the potentials applied to memory bus 22 by bidding memory controllers seeking access to memory bank 20. Memory bus 22 is also the data bus of the Cohen  
15 system.

A disadvantage of Cohen is that his contention requires a time duration that is not acceptable for use in systems operating at high data rates. Cohen is further undesirable in that it requires multiple accesses to memory bus 22 by a memory controller 18 for a memory write or read operation. Insofar as Cohen can be

20 understood, it requires a first contention by a memory controller 18 to determine access to memory bus 22; it requires a second contention by a memory controller 18 to transmit the signals required for a read or write operation; it requires yet another contention by a memory controller 18 for access to memory bus 22 to verify that the memory system 20 operated properly during a memory read or write operation. The  
25 time is required by Cohen for the three separate contentions for each memory access is unacceptable for use in high-speed data systems.

The system of the presently claimed invention (figure 18) overcomes the disadvantages of Cohen by providing contention facilities that operate at data rates associated with optical fiber. On applicant's figure 18, access flow regulator 1801  
30 receives files from element 1817 that may require storage. Access flow regulator 1801 receives the files and controls their storage into RAM banks 1803-1 through 1803-8.

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Conductors 1820 define a request bus that has a conductor unique to each state comptroller 1804 as well as to its associated RAM bank 1803. Each conductor of request bus 1820 receives a signal from its associated state controller 1804 indicating the present busy/idle state of its RAM bank 1803. These signals are applied to access

5 flow regulator 1801 by conductors 1820 to supply continuous information regarding the present busy/idle state of each RAM bank 1803. The presently claimed system does not use its data bus 1802 for a contention function, as does Cohen. The continuous busy/idle information applied to the access flow regulator 1801 by the conductors of request bus 1820 enables the access flow regulator 1801 to know which RAM bank

10 1803 is available for a read or write operation as soon as excess flow regulator 1801 receives a request from element 1817. A separate time-consuming contention function is not required by excess flow regulator 1801. The presently claimed invention eliminates the separate and time-consuming contention process required by Cohen, which requires the use of his data bus for contention operations following each

15 18 received read/right request from memory controller 18. The system of the presently claimed invention provides memory read and write operations at speeds commensurate with that required for optical fiber data systems.

The Cohen contention apparatus is slow and unfit for use with high-speed data systems. The Cohen data bus is controlled by contention signals applied to the Cohen data bus by controllers 18 currently requesting access. The system of the presently claimed invention utilizes the RAM banks 1803 to supply continuous signals to access flow regulator 1801 over separate conductors of request bus 1820 indicating the present busy/idle state of each RAM bank 1803. Access flow regulator 1801 uses these continuously received signals to determine the immediate availability of each 25 RAM bank 1803 for use on read/write operations. No separate time-consuming contention operation is required by the system of the presently claimed invention since the access flow regulator 1801 is continuously supplied with information indicating which memory banks 1803 are idle. The memory management system of the presently claimed invention is shown on figures 17 and 18 and is described in the specification 30 beginning on page 23, line 24.

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Paragraph 9 of the office section rejects claim is 1-4,7-8,11-14 and 18 as anticipated by Cohen under 35 U.S.C 102 ( b) or in the alternative, under 35 U.S.C 103 (small a) as obvious over Cohen. This rejection of is respectfully traversed.

Subparagraph 9.i of the office action asserts that in figures 1, 3, 4 and 6  
5 together with the "respective descriptive subsections", Cohen teaches all of these substantially equivalent or identical limitations of claim is 11 - 14 and 18. This assertion is also respectfully traversed. There is a substantial difference between Cohen and the system of the presently claimed invention. The Cohen, bus 22 is used both for the reading and writing as well as for contention for memory access. The  
10 contention process of Cohen is time-consuming and unsuitable for use in high-speed data systems. The system of the presently claimed invention uses data bus 1802 only for the reading and writing of RAM memories 1803. The presently claimed invention uses separate facilities including conductors of requests bus 1820 to supply continuous signals to access flow regulator 1801 regarding the busy/idle state of RAM  
15 memory banks 1803. The request bus conductors 1820 are independent of data bus 1802 and each conductor is unique to a different one of the memories 1803. Data bus 1802 is not used for contention.

Independent claims 1 and 11 together with their dependent claims have been amended to further distinguish from Cohen. As amended, the preamble of claim 1 now  
20 recites, in essence, that the contention function of the presently claimed invention allocates access via a data bus to a plurality of memories. Line 8 of claim 1 recites, in essence, the extension of signals from the memories to an access flow regulator over a request buss comprising **separate conductors with each conductor being individual to a different one of said memories**. The last element of claim 1, in  
25 essence, recites .....a determination that one of said memories is currently idle for granting a request for access to said data bus for the reading or writing of data in said one memory .

Amended claim 1 clearly distinguishes from Cohen since claim 1 specifically recites the use of a data bus for reading and writing memories and separately recites  
30 the use of the conductors of a request bus for enabling the access flow regulator to receive continuous signals regarding the present /busy/ idle state of the memories.

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The claimed isolation of applicant's data bus from the contention process distinguishes from Cohen and permits the system of the presently claimed invention to operate at the high data rates of optical fiber systems.

5 The amendment of claim 1 does not add new matter since it now incorporates the terminology of dependent claim 9.

Claims 2-10 are dependent on allowable claim 1 and are therefore similarly allowable. Claim 5 is further allowable because of its recitation of state comptrollers 1804 each of which is individual to a different RAM memory 1803. Cohen does not disclose state comptrollers or the apparatus equivalent thereof. Dependent claim 9 10 recites further details of the separate conductors of the request bus 1820 and state comptrollers 1804.

Independent apparatus claim 11 is comparable to independent method claim 1 and has been amended in the same manner as claim 1 to better distinguish from Cohen. Apparatus claims 12 through 20 are comparable to dependent claims 2-10 and 15 should be allowable as being dependent on allowable independent apparatus claims 1 and 11.

#### COMMENTS REGARDING THE 35 U.S.C 102 REJECTIONS

20 This rejection of claims 1-4, 7-8, 11-14, and 18 is respectfully traversed. All claims have been amended to better distinguish from Cohen.

If the examiner reapplys Cohen as anticipatory, he is respectfully requested to comply with the all elements rule of 35 U.S.C. 102 rejections and indicate with specificity and particularity where each element recited in the amended claims is to be 25 found in Cohen.

The 35 U.S.C. 102 rejection does not satisfy MPEP 2131 which characterizes the requirements a reference cited as being anticipatory must possess. MPEP 2131 states that a claim is anticipated only if each and every element set forth in the claim is found expressly or inherently in a single prior art reference. MPEP 2131 further states 30 that the identical invention must be shown in as complete detail in the reference as is contained in a rejected claim. The elements of the reference must be arranged as

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required by the claim. The reference must be understandable and enabling to a person of ordinary skill in the field of the invention. Cohen does not meet this requirement since, insofar as it can be understood, as it does not disclose each and every element recited in applicant's amended claims.

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### COMMENTS REGARDING THE 35 U.S.C. 103 (a) REJECTIONS

Claims 1-4, 7-8, 11-14, and 18 were rejected under 35 U.S.C. 103 (a) over Cohen. This rejection is respectively traversed. The dependent ones of these claims 10 (2-4, 7-8, 12-14, and 18) should be allowable as being dependent upon one of allowable amended independent claims 1 and 11. These rejections are further traversed since they fail to meet requirements of 35 U.S.C. 103 obviousness rejections. The examiner provided no evidence supporting his rejection. Instead, he merely asserted that it would be obvious to modify Cohen "to come up with the 15 claimed invention". This rejection is improper since the examiner failed to provide any evidence indicating why one would be motivated to modify Cohen or how the proposed modifications could be implemented.

The examiner's comments are nothing more than unsupported assertions that it would be obvious to modify Cohen to "to come up with the claimed invention". The 20 examiner's assertions amount to the impermissible 20/20 hindsight based upon knowledge gained by a reading of the applicant's application and the use of this knowledge against the applicant. An obviousness rejection requires supporting evidence. An assertion of obviousness without supporting evidence renders the rejection improper.

25 The examiner is respectfully referred to section 2142 of the MPEP which describes what is required to establish a *prima facie case of obviousness*. This section states that the examiner must initially present evidence supporting a *prima facie conclusion of obviousness*. This section also states that if the examiner does not produce evidence supporting a *prima facie case of obviousness*, the applicant is 30 under no obligation to submit evidence of nonobviousness.

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Section 2142 further requires that the prior art reference must suggest all of the limitations of the rejected claim. Section 2142 further states that in order to support a conclusion that the presently claimed invention is obvious, the reference must expressly or impliedly suggest the presently claimed invention. This section of the 5 MPEP also requires that the examiner must present a convincing line of reasoning why the claimed invention would be obvious in view of the teachings of the reference. The examiner's obviousness rejection is improper since it fails to meet any of these requirements.

Section 2143 discusses the evidence required to support an asserted 10 motivation to modify a reference. This section states that the prior art must suggest the desirability of modifying the reference to make the presently claimed invention obvious. It states that without evidence of motivation to modify, a rejection based on obviousness is improper. Section 2143 also states that the fact that the reference *can be modified is not sufficient to establish a prima facie obviousness*. It further states 15 that the fact that *the fact that modification of the reference may be within the capabilities of one skilled in the art is not evidence of motivation to modify*. Section 2143.03 requires that all claim limitations must be taught by the prior art.

The examiner is referred to the above-discussed sections of the MPEP together 20 with the case law cited therein for further elaboration on the subject of what is required to establish *prima facie obviousness*. By reading the above sections of the MPEP, the examiner will be instructed that the mere fact that it might be desirable to modify Cohen is not sufficient. The elusive ingredient required to support *prima- facie obviousness* is evidence of a motivation to modify. Ideally, this evidence of motivation should be found in the Cohen.

25 An obviousness rejection proposing the modification of a reference should contain sufficient information so that it is clear as to what the examiner is suggesting. Design level details are not required. However, more is required than the mere assertion that the references could be modified. Fairness requires that the examiner provide some information as to how the references are to be modified to achieve the 30 proposed modification.

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If the examiner reapplys Cohen in the next office action, he is respectfully requested to comply with the requirements of the MPEP and provide evidence of motivation to modify. In so doing, he is respectfully requested to indicate with specificity and particularity where the evidence of motivation to modify is found in

5 Cohen.

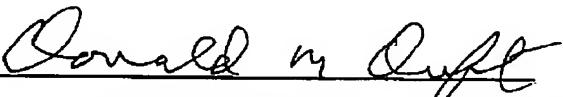
The undersigned wishes to thank the examiner for the courtesies extended during a recent phone conversation on 28 March 2006.

It is respectfully submitted that the claims remaining in application are allowable over the prior art and such action is respectfully requested.

10 The examiner is respectfully requested to call if the prosecution of the application can be expedited by so doing.

Respectfully submitted,

Date: 17 apr 06



**SIGNATURE OF PRACTITIONER**

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